

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
24 March 2005 (24.03.2005)

PCT

(10) International Publication Number  
**WO 2005/025702 A1**

(51) International Patent Classification<sup>7</sup>: **A63F 9/00**  
(21) International Application Number:  
PCT/GB2003/005200

(22) International Filing Date:  
27 November 2003 (27.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0321585.2 15 September 2003 (15.09.2003) GB

(71) Applicant (for all designated States except US): **BLUE SKY DESIGNS LIMITED** [GB/GB]; 12 Park Mount, Old Pool Bank, Pool in Wharfedale, West Yorkshire LS21 3BX (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **ELVIDGE, Jonathan** [GB/GB]; Blue sky Designs Limited, 12 Park Mount, Old Pool Bank, Pool in Wharfedale, West Yorkshire LS21 3BX (GB).

(74) Agent: **KENNEDYS PATENT AGENCY LIMITED**; Floor 5 Queens House, 29 St Vincent Place, Glasgow G1 2DT (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

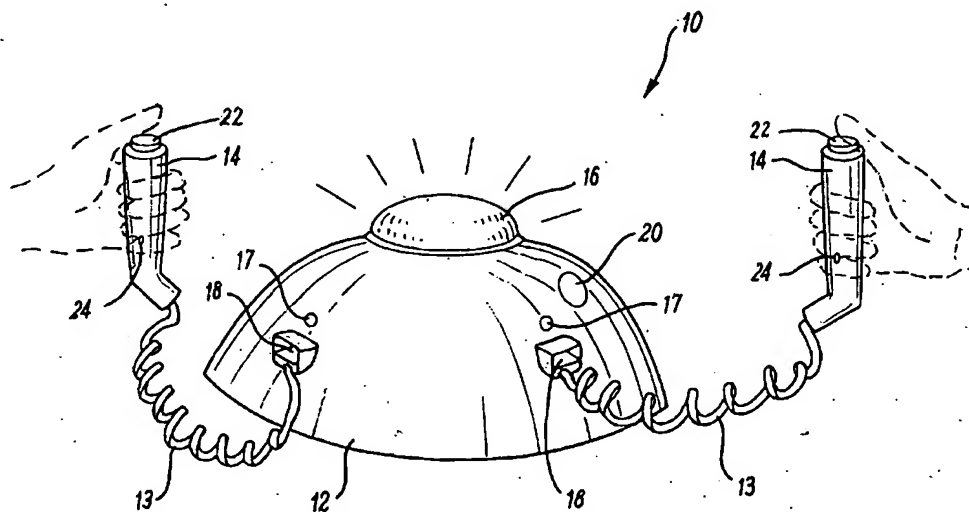
(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **GAME-PLAYING APPARATUS, AND IN PARTICULAR GAME-PLAYING APPARATUS INCORPORATING ELECTRIC SHOCK MEANS**



(57) Abstract: The apparatus (10) compares the ability of multiple players to perform a physical task, and administers a disincentive, for example a measured electric shock to one or more unsuccessful players. In an example, the apparatus comprises a number of handsets (14) with input devices (22). The apparatus compares reaction time of a plurality of players from a start signal, and administers an electric shock to the players with slower, or the slowest, of reaction times via the handset.

WO 2005/025702 A1

4/pts

10/530261

1 Game playing apparatus, and in particular game playing  
2 apparatus incorporating electric shock means  
3

4 The present invention relates to game playing apparatus,  
5 and in particular to apparatus for playing a competitive  
6 game with a plurality of players.  
7

8 Competitive games are extremely popular between friends  
9 or competitors that are more serious. Regardless of  
10 whether or not the game is played for fun, a competitive  
11 element enhances the playability of the game and indeed  
12 improves performance of the players. Pride of the  
13 players is no doubt a contributing factor to the  
14 playability of competitive games, as the players will  
15 tend to prefer to win rather than lose. However, it is  
16 often desirable to provide an additional incentive for  
17 the player to win the game, in order to improve the  
18 element of competition and the rate of player  
19 improvement. Such an incentive can be a positive  
20 incentive in the form of a prize to the winner.  
21 Alternatively, the incentive can be negative, i.e. a  
22 disincentive in that the losing player is disadvantaged  
23 in some way. Typical examples of these incentives  
24 include dares or forfeits. In many situations, prizes or

1 positive incentives are not readily available, and  
2 therefore disincentives are more often  
3 applied. This partially explains the popularity of games  
4 involving forfeits and dares.

5  
6 It may be desirable to provide a physical or tangible  
7 disincentive to a player, rather than a psychological  
8 disincentive such as a forfeit. This is apparent from  
9 the nature of playground games such as "raps" during  
10 which the loser is subjected to blows on the knuckles  
11 with a pack of cards. However, such games typically  
12 involve little or no skill level and are based on chance  
13 alone. In addition, physical punishment of the type  
14 described is liable to cause injury and/permanent damage  
15 to the recipient of the punishment.

16  
17 It would therefore be desirable to provide apparatus for  
18 a competitive game between two or more players, capable  
19 of applying a disincentive to one or more losing players  
20 in a manner that does not injure those players.

21  
22 The principle of using a measured electric shock to  
23 deliver injury free pain is well-known. For example,  
24 novelty products are available that deliver electric  
25 shocks. These include everyday items such as pens and  
26 lighters that may be armed by one person and later  
27 handled by a second person that receives an electric  
28 shock when touching the item.

29  
30 In addition, game controllers for video gaming consoles  
31 including the provision for delivering an electric shock  
32 to players during game play have been proposed. However,  
33 these controllers do not inflict pain; rather it is

1 designed to induce low level muscle spasm to the player  
2 in order to create a tangible/tactile sensation during  
3 game play. This controller, by definition, requires the  
4 use of complex and expensive games consoles, additional  
5 related hardware, and software.

6  
7 Further available apparatus includes an arcade machine  
8 that allows a player to test his or her tolerance of  
9 pain. Although such machines are often marketed as  
10 "electric chairs", they in fact use high frequency  
11 vibration to induce a sensation to the player similar to  
12 an electric shock. Typically this apparatus is for a  
13 single player, and generates increasing levels of pain  
14 until the player concedes. Although the level reached  
15 can be recorded, there is no element of direct  
16 competition between players.

17  
18 Additional existing apparatus includes a form of  
19 roulette, in which up to four players insert fingers into  
20 sockets on an apparatus, with one player randomly chosen  
21 by the apparatus to receive an electric shock. This  
22 apparatus lacks an element of competition and skill.

23  
24 According to the first aspect of the invention there is  
25 provided gaming apparatus for a plurality of players,  
26 comprising: comparison means for comparing the  
27 performance of a task by a plurality of players and  
28 determining; means for administering a disincentive to  
29 one or more of said players.

30  
31 Preferably, the disincentive is a tangible disincentive  
32 in the form of injury-free pain.

33

1 More preferably, the disincentive is a measured electric  
2 shock.

3

4 The apparatus may include a plurality of contact elements  
5 adapted to be attached to or held by a player.

6 The contact elements may comprise a handle.

7

8 The apparatus is preferably adapted to administer a  
9 disincentive via the contact elements. Preferably, the  
10 contact elements include an electrode for administering a  
11 measured electric shock to a player.

12

13 The gaming apparatus may include a housing enclosing the  
14 comparison means.

15

16 The apparatus may include a plurality of player input  
17 devices, operable to be activated by a player and provide  
18 a signal to the measuring and comparing means.

19 Preferably, the player input devices are provided on the  
20 contact elements.

21

22 Preferably, the apparatus includes a signal output device  
23 for indicating to the players commencement of a game.

24 The signal output device may comprise a display.

25 Alternatively, or in addition, the signal output device  
26 may comprise an audio device.

27

28 Preferably, the apparatus is adapted to compare reaction  
29 time of the players. More preferably, the apparatus is  
30 adapted to administer a measured electric shock to a  
31 player determined as having a slower reaction time than  
32 another player.

33

1 Preferably, the apparatus is adapted to provide a start  
2 signal to the players, and compares reaction times of the  
3 players by comparing the elapsed time between the time of  
4 the start signal and the receipt of signals from the  
5 respective player input means located on the contact  
6 means.

7  
8 The apparatus may be adapted to determine the slowest  
9 reaction time, and administer a disincentive to the  
10 player via the corresponding contact means.

11  
12 Alternatively, the apparatus may be adapted to determine  
13 the fastest reaction time, and administer a disincentive  
14 to the remaining players via the corresponding contact  
15 elements.

16  
17 According to a second aspect of the invention there is  
18 provided apparatus for playing a competitive game between  
19 two or more players, the apparatus comprising a plurality  
20 of contact elements adapted to be attached to or held by  
21 a player, a plurality of player input devices adapted to  
22 measure a players performance of a particular physical  
23 task, comparison means for comparing the relative  
24 performance of the players at said physical task, and  
25 means for administering a measured electric shock to at  
26 least one player determined to be less capable of the  
27 physical task.

28  
29 Preferably, the physical task is reaction time.

30  
31 According to a third aspect of the invention there is  
32 provided a method of improving reaction time of  
33 individuals, comprising the steps of indicating a start  
34 time to a plurality of individuals; comparing reaction

1 time of the individuals relative to one another; and  
2 administering a measured electric shock to at least one  
3 individual determined to have a lower reaction time  
4 relative to at least one other individual.

5 There will now be described, by way of example only, an  
6 embodiment of the invention with reference to the  
7 following drawings, of which:

8

9           Figure 1           is a perspective view of apparatus  
10                               according to an embodiment of the  
11                               invention;

12

13           Figure 2           is a view of internal components of a  
14                               handset according to an embodiment of  
15                               the invention;

16

17           Figure 3           shows schematically the operation of  
18                               the apparatus of Figure 1;

19

20           Figure 4           is a perspective view of an  
21                               alternative configuration of  
22                               component parts.

23

24 With reference firstly to Figure 1, there is shown game  
25 playing apparatus generally depicted at 10 comprising a  
26 housing 12 and a pair of handsets 14 connected to the  
27 housing 12 via cables 13. The housing 12 is preferably  
28 made of plastic, and contains the internal components of  
29 the apparatus, which will be described below.

30

31 The housing comprises a display 16, containing light  
32 emitting diodes (not shown), and additional LEDs 17  
33 corresponding to the handsets 14. The handsets may be  
34 removably mounted in sockets 18 when not being used.

1

2 The housing is also provided with a selection switch 20  
3 for selecting which handsets are operational. Although  
4 not shown, the base of the housing is provided with a  
5 loudspeaker grille, a battery access panel, and plastic  
6 suction pads for reducing slippage of the apparatus on a  
7 surface.

8

9 The handsets 14 have moulded plastic casings, and are  
10 provided with player input devices 22 in the form of  
11 electronic switches, and electrodes 24.

12

13 Figure 2 shows a handset 140 having its casing separated  
14 to show internal components. It should be noted that  
15 although the shape of the handsets 14 and 140 shown in  
16 Figures 1 and 2 are different, the functional components  
17 are identical.

18

19 The handset 140 comprises a first part-casing 141 and a  
20 second part-casing 142 of moulded plastic material.  
21 Corresponding bores 144 are provided in the part-casings  
22 for receiving fixings to secure the part-casings to one  
23 another.

24

25 The handset 140 is provided with a player input device  
26 22, consisting of an electronic switch 148 and a switch  
27 cover 146. The switch 148 is connected to the housing  
28 via wires 149 that form part of the cable 13. The wires  
29 149 are adhered to the interior of the casings by  
30 adhesive 151. The wires 149 carry an input signal from  
31 the switch 148 to the housing 12.

32

33 The handset also contains electrodes 24 mounted such that  
34 they extend through the casing wall, and are contacted by



1 the player during use. The electrodes are connected to  
2 the apparatus by wires 153, which are connected to the  
3 housing as part of the cables 13. The wires 13 carry a  
4 measured electric shock from the housing to the handset.

5  
6 Figure 3 shows schematically the interaction of component  
7 parts of the apparatus. The apparatus includes four  
8 handsets, shown as 14, each comprising an input device 22  
9 and an electrode 24. The handsets are connected to the  
10 controlling electronics 30 of the apparatus via wires 149  
11 and 153. The electronics 30 include the timing circuitry  
12 and circuitry capable of comparing the relative times of  
13 received input signals. The controlling electronics may  
14 include integrated circuitry.

15  
16 The controlling electronics is also capable of  
17 administering a controlled electric shock to a player via  
18 electrodes 24. This could be achieved by the discharge  
19 of a capacitor across the electrodes.

20  
21 The electronics 30 are coupled to an appropriate power  
22 supply, such as a battery. Also connected to the  
23 electronics 30 are the devices located in the housing 12.  
24 These include the display 16, the LEDs 17, the selecting  
25 switch 20, a loudspeaker 19, and a start switch 23.

26  
27 In use, two to four players take a handset 14. The  
28 selection switch 20 allows the players to select which  
29 handsets are operational. This can be achieved by  
30 pressing the selection switch, each depression moving  
31 through a cycle of handset combinations. If four players  
32 are competing, then all the handsets must be operational.  
33 If less than four are competing, then the system must be  
34 told which handsets are not used in order that a valid

1 comparison can be conducted. The operational status of  
2 each handset is indicated by the corresponding LED 17.

3

4 When all players are ready, one of the players depresses  
5 the start switch 23. Conveniently, the start switch 23  
6 can be formed as part of the display 16. In response to  
7 the input from the start switch 23, the apparatus  
8 provides a preliminary signal to the players indicating  
9 that the game has commenced. The preliminary signal is  
10 preferably audible via the loudspeaker 19, and visible  
11 via the display. In one embodiment the signal sounds as  
12 a warning signal.

13

14 After a time determined by the apparatus, a start signal  
15 is output to the players. As with the preliminary  
16 signal, the start signal can be audio-visual via the  
17 display 16 and the loudspeaker 20. The time between the  
18 start of the preliminary signal and the start signal is  
19 selected by the apparatus with a degree of randomness,  
20 although there may be predetermined upper and lower  
21 limits to the "preliminary time".

22

23 After the start signal commences, the players respond by  
24 entering an input signal via switches 148 on the handsets  
25 14, by depressing switch cover 146. The players depress  
26 the switch cover 146 as quickly as they can after the  
27 start signal has commenced. The elapsed times between  
28 the start time and receipt of the input signals from the  
29 respective handsets are compared by the controlling  
30 electronics. The apparatus determines from which handset  
31 the slowest reaction occurred. In response, the  
32 apparatus administers a measured electric shock to the  
33 electrodes on that handset, which is felt by the player  
34 as an injury-free pain.

1  
2 In an alternative embodiment, the apparatus could  
3 administer measured electric shocks to all of the players  
4 other than the one with the fastest reaction time. A  
5 further alternative could allow shocks to be administered  
6 to any number of the competing players.

7  
8 As a further alternative (or additional) feature, to  
9 discourage the players from "false-starting" an electric  
10 shock can be administered to any player that depresses  
11 the switch prior to the output of the start signal.

12  
13 As an optional additional feature, the apparatus may be  
14 provided with means for setting the strength of the  
15 electric shock administered. This can be achieved by any  
16 suitable circuitry components, such as an arrangement of  
17 variable resistors controlled by the electronics. In one  
18 example, the strength of the electric shock is controlled  
19 by a user selection of a "level", prior to the game  
20 commencing. In an alternative example, the strength of  
21 the electric shock can be incremented automatically over  
22 a series of rounds. In a further example, the strength  
23 of the electric shock could be selected at random,  
24 between predetermined voltage thresholds.

25  
26 Figure 4 shows an embodiment of the invention having the  
27 same functional components as the embodiments of Figures  
28 1 and 3, but with different external appearance.

29  
30 It will be appreciated that alternative configurations  
31 may be implemented within the scope of the invention  
32 herein intended. For example, any number of handsets and  
33 players above one can take part. The handsets themselves  
34 could be configured in different manners. For example,

1 the electrodes could apply an electric shock to the  
2 player by direct contact between the electrode and the  
3 player. Alternatively, the casing of the handset may  
4 have conductive properties, with the two part-casings  
5 being insulated from one another. This would result in  
6 the shock being administered to the player via the  
7 casing.

8  
9 In addition, the handsets could be replaced with contact  
10 pads attached to, rather than held by, the player. In  
11 particular, the electrodes could be secured to the  
12 player.

13  
14 Alternative arrangements for indicating start of a game  
15 are also possible, for example, audio/visual countdowns.  
16

17 Determination and comparison of reaction times could be  
18 achieved by comparison with predetermined thresholds, as  
19 an alternative or in addition to a direct comparison  
20 between players.

21  
22 The present invention provides an enhanced competitive  
23 game and improved method of comparing and improving  
24 performance of a physical task.

25

1    Claims

2

3    1.   Game playing apparatus for a plurality of players,  
4       the apparatus comprising: comparison means for  
5       comparing the performance of a task by a plurality  
6       of players and means for administering a  
7       disincentive to one or more of said players.

8

9    2.   Apparatus as claimed in Claim 1 further comprising  
10       at least one contact element adapted to contact a  
11       player, wherein the disincentive is a tangible  
12       disincentive in the form of injury-free pain  
13       administered via the at least one contact element.

14

15   3.   Apparatus as claimed in Claim 2 wherein the  
16       disincentive is a measured electric shock.

17

18   4.   Apparatus as claimed in Claim 2 or Claim 3 wherein  
19       at least one contact element is provided for each  
20       player.

21

22   5.   Apparatus for playing a competitive game between two  
23       or more players, the apparatus comprising a  
24       plurality of contact elements adapted to contact a  
25       player, a plurality of player input devices adapted  
26       to measure a player's performance of a particular  
27       physical task, comparison means for comparing the  
28       relative performance of the players at said physical  
29       task, and means for administering a measured  
30       electric shock to at least one player determined to  
31       be less capable of the physical task.

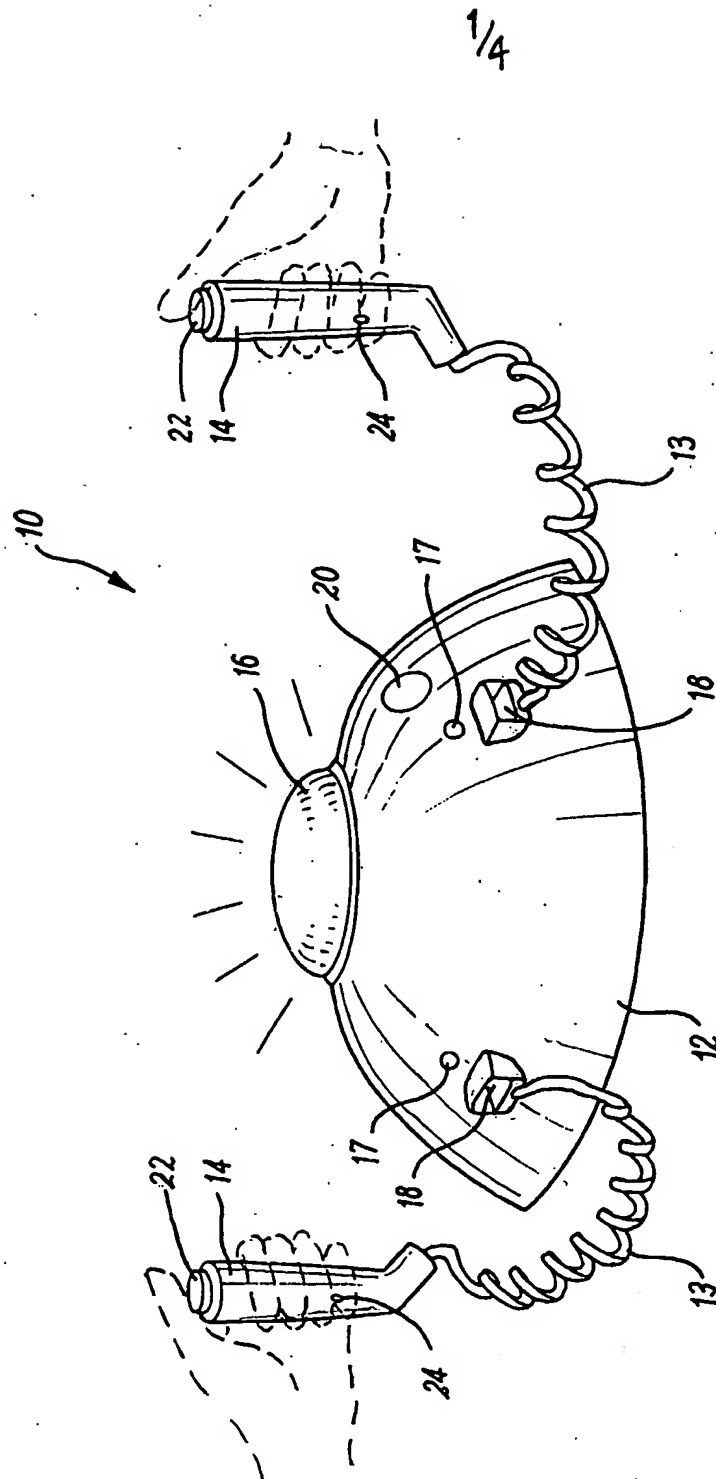
32

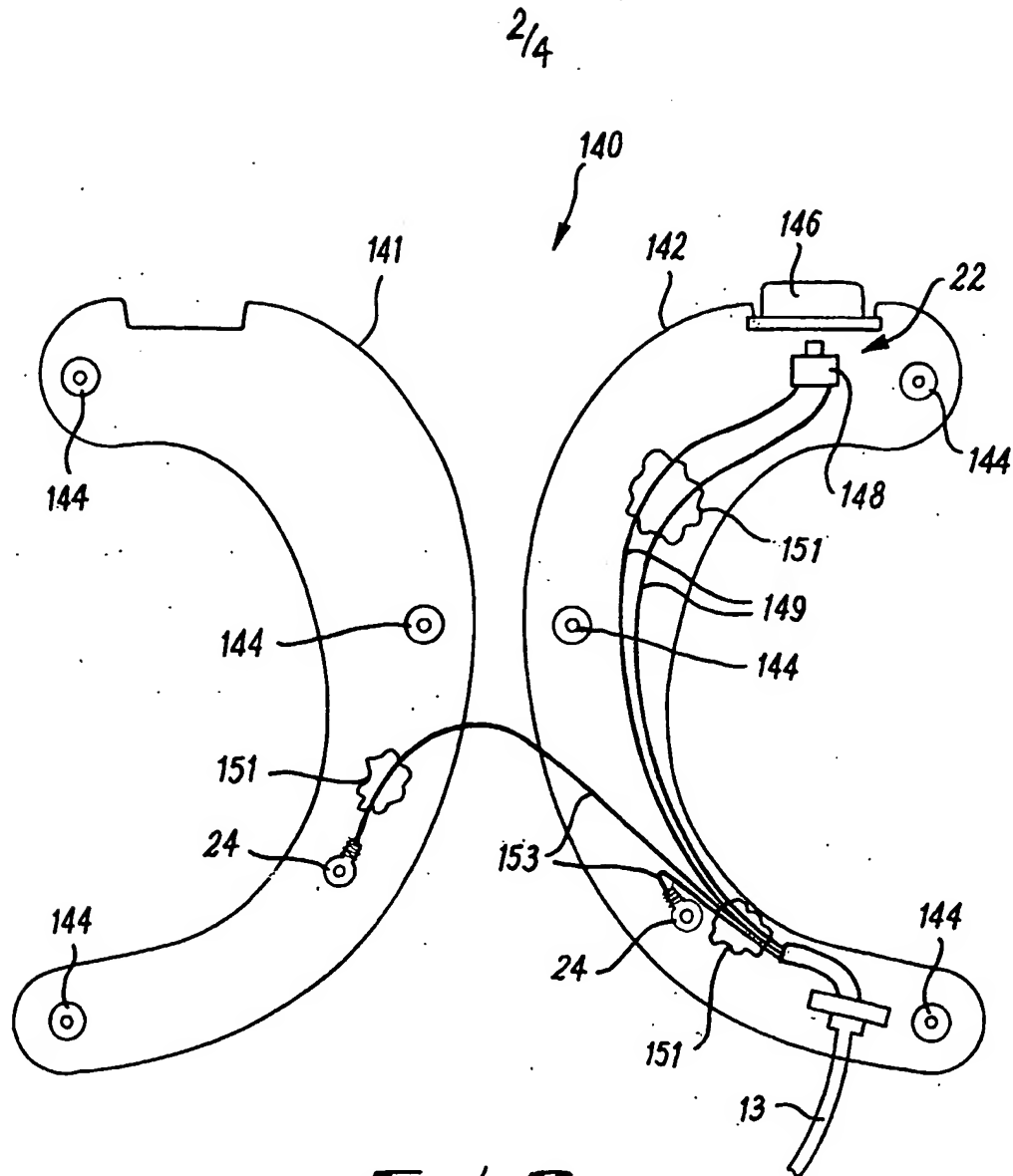
- 1 6. Apparatus as claimed in any preceding Claim wherein  
2 the contact element comprises a handset to be held  
3 by a player.  
4
- 5 7. Apparatus as claimed in any preceding Claim wherein  
6 the contact element includes an electrode for  
7 administering a measured electric shock to a player.  
8
- 9 8. Apparatus as claimed in any preceding Claim further  
10 comprising means for setting a voltage at which an  
11 electric shock is administered.  
12
- 13 9. Apparatus as claimed in Claim 8 comprising means for  
14 enabling a user to set a voltage at which an  
15 electric shock is administered.  
16
- 17 10. Apparatus as claimed in Claim 8 or Claim 9  
18 comprising means for automatically setting a voltage  
19 at which an electric shock is administered.  
20
- 21 11. Apparatus as claimed in any preceding Claim  
22 comprising a plurality of player input devices  
23 operable to be activated by a player and to provide  
24 a signal to the comparing means.  
25
- 26 12. Apparatus as claimed in any preceding Claim wherein  
27 the player input devices are provided on the contact  
28 elements.  
29
- 30 13. Apparatus as claimed in any preceding Claim wherein  
31 the apparatus includes a signal output device for  
32 indicating a start signal to the players at a start  
33 time.  
34

- 1 14. Apparatus as claimed in Claim 13 wherein the signal  
2 output device comprises a display.  
3
- 4 15. Apparatus as claimed in Claim 13 or Claim 14 wherein  
5 the signal output device comprises an audio device.  
6
- 7 16. Apparatus as claimed in any preceding Claim wherein  
8 the apparatus is adapted to compare reaction time of  
9 the players, wherein reaction time is defined as the  
10 time elapsed between the start time and the  
11 activation of input devices corresponding to the  
12 players.  
13
- 14 17. Apparatus as claimed in any preceding Claim wherein  
15 the apparatus is adapted to administer a measured  
16 electric shock to a player determined as having a  
17 longer reaction time than another player.  
18
- 19 18. Apparatus as claimed in any preceding Claim wherein  
20 the apparatus is be adapted to determine the longest  
21 reaction time and administer a disincentive to the  
22 player having the longest reaction time via the  
23 corresponding contact element.  
24
- 25 19. Apparatus as claimed in any preceding Claim wherein  
26 the apparatus is be adapted to determine the  
27 shortest reaction time and administer a disincentive  
28 to the remaining players via the corresponding  
29 contact elements.  
30
- 31 20. Apparatus as claimed in any preceding Claim adapted  
32 to administer a disincentive to a plurality of  
33 players.

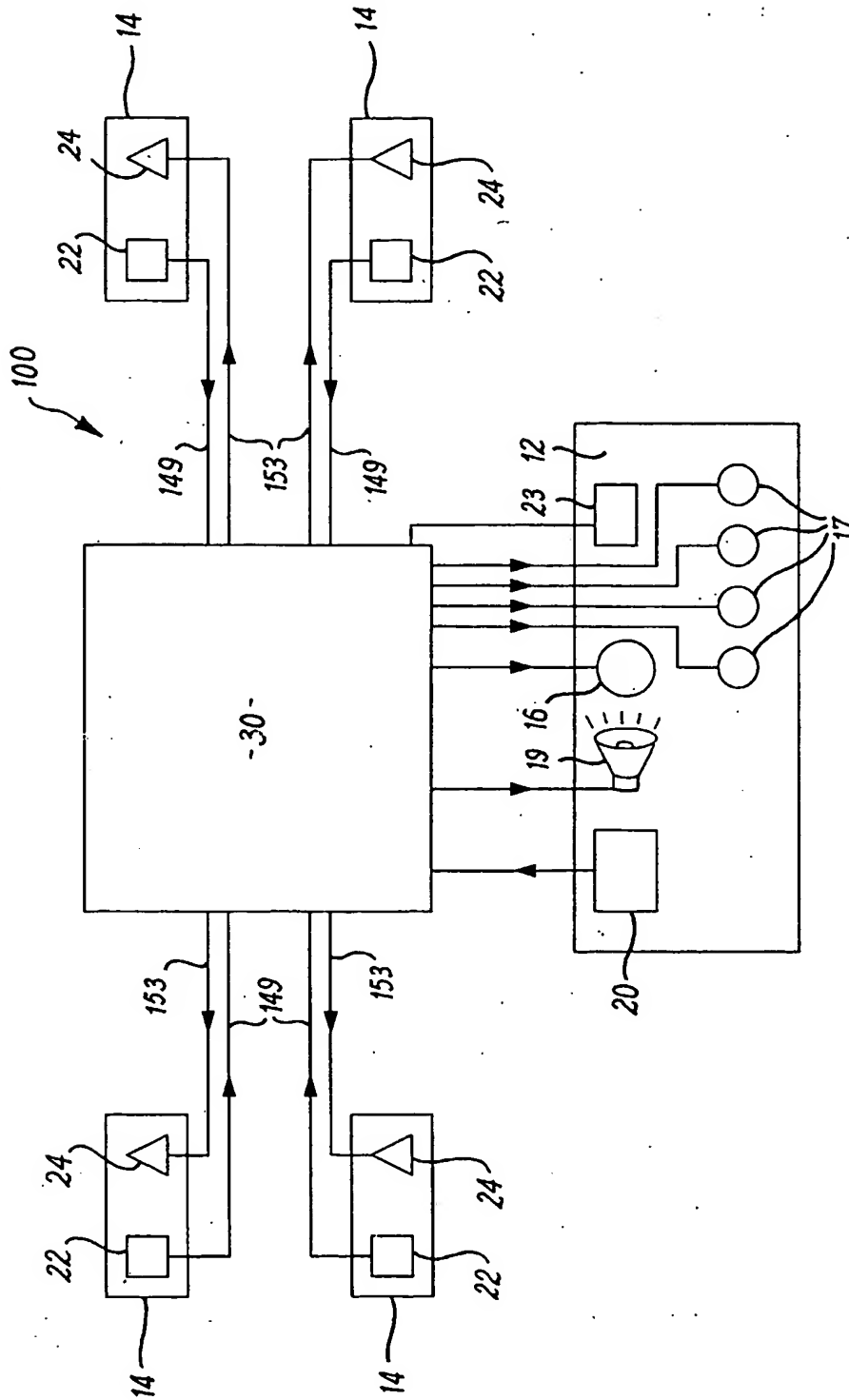
- 1 21: A method of improving reaction time of individuals,  
2 comprising the steps of indicating a start time to a  
3 plurality of individuals; comparing reaction time of  
4 the individuals relative to one another, wherein  
5 reaction time is defined as the time elapsed between  
6 the start time and the activation of input devices  
7 corresponding to the individuals, and administering  
8 a measured electric shock to at least one individual  
9 determined to have a longer reaction time relative  
10 to at least one other individual.  
11
- 12 22. The method as claimed in Claim 21 comprising the  
13 steps of determining the longest reaction time and  
14 administering a measured electric shock to the  
15 player having the longest reaction time.  
16
- 17 23. The method as claimed in Claim 21 or Claim 22  
18 comprising the steps of determining the shortest  
19 reaction time and administering a measured electric  
20 shock to the remaining players.  
21
- 22 24. The method as claimed in any of Claims 21 to 23  
23 comprising the step of administering a measured  
24 electric shock to a plurality of players.  
25
- 26 25. The method as claimed in any of Claims 21 to 24  
27 comprising the step of setting a voltage at which an  
28 electric shock is administered.





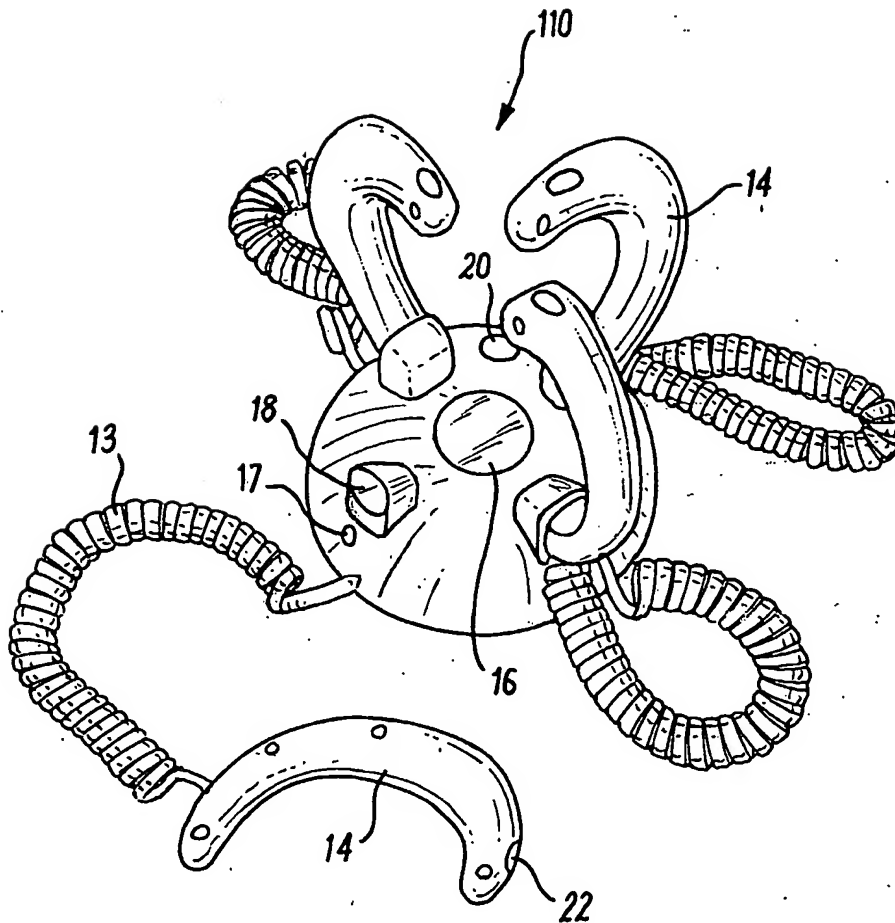
**FIG. 2**

3/4



**FIG. 3**

4/4

**FIG. 4**